Contaminated land

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1. Some preliminary definitions

'Contamination' is defined by the Oxford English Dictionary as 'the action of contaminating, or condition of being contaminated; defilement, pollution, infection; specifically the presence of radioactivity where it is harmful or undesirable'. 'Pollution' is defined as 'defilement; uncleanness or impurity caused by contamination (physical or moral); the presence in the environment, or the introduction into it, of products of human activity which have harmful or objectionable effects'. The two terms have often been used more or less interchangeably, and titles of files and other records may reflect different practice between departments or over time.

Because the term 'contaminated land' has only relatively recently acquired a specific legal meaning, searches using that term in Discovery, our **catalogue**, will lead mostly to records which are still closed. General searches using 'contamination' or 'pollution' as search terms will yield hundreds of hits, many of which will not be helpful for the specific requirements of individual researchers and enquirers. Searches under the names of particular substances or places are much more likely to be productive. Some departments used generic terms for filing - for example, the 'Dangerous substances' heading used by the Home Office (**HO 45** and **HO 144**).

2. The Royal Commission on Environmental Pollution

The Royal Commission on Environmental Pollution was established as a standing body by Royal Warrant in February 1970 with the following terms of reference:

'To advise on matters, both national and international, concerning the pollution of the environment; on the adequacy of research in this field; and the future possibilities of danger to the environment.'

The Commission takes a broad view of what is meant by 'pollution'. It considers the term to cover the introduction by man into the environment of substances or energy liable to cause hazards to human health, harm to living resources and ecological systems, damage to structures or amenity, or interference with legitimate uses of the environment. Within this remit the Commission has freedom to consider and advise on any matter it chooses; the Government may also request the Commission to consider particular topics. The records of the Commission in The National Archives include Reports in **CY 1**; minutes and papers for meetings of the Commission in **CY 2**, and of the Commission's sub-committees in **CY 4**; and registered files in **CY 3**.

3. Contaminated land: current legislation

Section 57 of the Environment Act 1995 inserted into the Environmental Protection Act 1990 a Part IIA which provided a new regulatory regime for the identification and remediation of contaminated land. This regime was to come into force on 1 April 2000. The Act required local authorities to create and maintain registers of contaminated land. These registers are normally available for public inspection: most local authority websites contain information about the registers and the conditions under which inspection may take place. The Act also placed a duty on local authorities to inspect their areas for any potentially contaminated land (as opposed to actual contaminated land), but not all authorities are yet creating registers of potentially contaminated land.

The Act defined contaminated land as 'any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that (a) significant harm is being caused or there is a significant possibility of such harm being caused; or (b) pollution of controlled waters is being, or is likely to be, caused'.

In this context, 'harm' means 'harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property'.

'Controlled waters' are defined by the Water Resources Act 1991, section 104 as being:

1. territorial waters, ie the waters which extend seaward for three miles from the baselines from which the breadth of the territorial sea adjacent to England and Wales is measured
2. coastal waters, ie any waters which are within the area which extends landward from those baselines as far as the limit of the highest tide; or, in the case of the waters of any relevant river or watercourse, the fresh-water limit of the river or watercourse, together with the waters of any enclosed dock which adjoins waters within that area
3. inland freshwaters, ie the waters of any relevant lake or pond or of so much of any relevant river or watercourse as is above the fresh-water limit
4. ground waters, ie any waters contained in underground strata.

They may be summarised as including springs, rivers, canals, estuaries and ponds. The subject of waterway pollution is beyond the scope of this research guide, but a search of our **catalogue** using '**river AND pollution**' will lead to numerous references, including reports of the Standing Commission on River Pollution in **MAF 326** and records of the River Pollution Joint Advisory Commission in **MAF 49**. It is also worth searching for references to pollutants such as sewage works, breweries, industrial waste and fertilisers.

Where contamination is found to exist, the local authority may require the owner(s) of the land to take 'remediation action'. This may involve action (a) to assess the condition of the land in question, of any controlled waters affected by that land, or of any land adjoining or adjacent to that land; (b) to prevent or minimise, or remedy or mitigate the effects of, any significant harm, or any pollution of controlled waters; (c) to restore land or waters to their former state; and/or (d) to make subsequent inspections from time to time for the purpose of keeping under review the condition of the land or waters.

A number of companies specialise in carrying out contaminated land investigations, and their websites are useful sources of information about law and practice.

4. Contaminating substances

There are literally thousands of chemicals and substances that can be associated with contaminated land. In general, the following criteria are used to judge whether substances have the potential to cause problems with regard to contamination:

- having a significant toxicity on humans
- having a significant toxicity on the aquatic environment
- having a significant toxicity on the ecosystem
- having a significant effect on materials and structures used on sites
- having a significant persistence in soil or a tendency to bioaccumulate

- being likely to occur in significant concentrations on many sites

The website **www.contaminatedland.co.uk/** identifies a very large number of potentially contaminating substances, including aromatics, asbestos, biological agents (including anthrax, tetanus, BSE, genetically modified organisms), heavy metals, combustible materials (timber, ash, coal residues), corrosives, flammable liquids, and toxic, flammable and explosive gases.

5. Contaminated land: records in The National Archives

Widespread industrialisation and exploitation of the land over many centuries mean that many government departments have created records which are likely to provide information about the possibility of contamination of particular areas of land.

The following list sets out some of the subject areas which might be considered searching for information about contaminated land. It is not exhaustive but merely an attempt to indicate the kinds of contaminants which might be identifiable from records held here.

5.1. Aircraft

First World War files about crashed aircraft are in **AIR 1**. Files about examinations of and investigations into German aircraft which crashed in the UK during the Second World War may be found in **AIR 16**, **AIR 22**, **AIR 40** and **AVIA 15**. These reports are not complete. Many files on crashes of civil aircraft, both in Britain and overseas, are among the records of the Ministry of Civil Aviation Accidents Investigation Branch in **AVIA 101**.

5.2. Alkalis

Records of the Alkali Inspectorate and its successors relating to the implementation of the Alkali Acts and Orders from 1863 to date are in **BT 328**. The series includes registers of alkali works, staff papers and correspondence with industry. Topics relate to the monitoring of the disposal of by-products of industrial processes, with an emphasis on anti-air pollution measures. Other files about alkali works are in **HLG 52**, **HLG 55** and **HLG 120**.

5.3. Ammunition dumps

Files on the dumping of ammunition at the end of the Second World War, mostly overseas or at sea, are among the records of the War Office (**WO 32**, **WO 199**, **WO 208** etc); Admiralty (**ADM 1**, **ADM 228**) and Air Ministry **(AIR 40**, **AIR 51**). A few files from the end of the First World War are in **MUN 4**.

5.4. Anthrax

Files about military uses of anthrax are in **DEFE 55** and **WO 181**. Information about Gruinard Island (off the west coast of Scotland) where anthrax spores were dispersed by bombs during the Second World War is in **DEFE 55/118** and **DEFE 131**, **WO 32/20442**. Many files about the dangers of anthrax are in Ministry of Labour records (**LAB 2**, **LAB 14**, **LAB 46**, **LAB 56**).

5.5. Asbestos

Ministry of Labour records contain much about asbestos workers and conditions (**LAB 2**, **LAB 14**). Most of the documents identified from a basic search of our catalogue refer to manufacturing processes, industrial uses etc, but there are some references to particular locations.

5.6. Bombs

The bomb census maps in HO 193, surveys of air-raid damage in **HO 192**, and other Ministry of Home Security series may be used to help locate unexploded bombs dropped on Britain during the Second World War. War Damage Commission records in **IR 33**-39 may sometimes also be useful.

5.7. Burial sites

There are files in **HO 45** and **HLG 45** about the erection of baths, schools, public shelters and other buildings over disused burial grounds and cemeteries. The records of the Ministry of Housing and Local Government (**HLG** series) contain numerous references to the creation, extension and closure of burial grounds.

5.8. Chemicals

An Admiralty Chemist was first appointed in 1870 and subsequently an Admiralty Chemical Department developed at Portsmouth. Its reports, from 1939, may be found in **ADM 248**. Reports of the Chemical Advisory Panel, established in 1943 to advise the Director of Scientific Research are in **ADM 247** and **ADM 220**. Although the Admiralty had established an Experimental Works of its own in the 1870s, the Navy possessed no central research establishment. However, the outbreak of the First World War gave a powerful stimulus to naval research and development, with the realisation that technological superiority in mechanical and chemical science was essential to success. The Admiralty Central Metallurgical Laboratory was established at Portsmouth about 1936 to investigate naval metallurgical problems; it also acquired a number of outstation laboratories. In 1956 it was amalgamated with the Admiralty Chemical Department to form the Central Dockyard Laboratory. Its records are in **ADM 254**. An Admiralty Materials Laboratory was established in 1947 for research into metallurgy, rubber, plastics and chemicals. It was later absorbed into the Admiralty Marine Technology Establishment: records in **ADM 252**.

The records of the Ministry of Supply (later the War Office) Advisory Council of Scientific Research and Technical Development, later Scientific Advisory Council in **WO 195** include a number of files about work at Waltham Abbey.

The records of all the defence departments contain an enormous amount of information about experiments with, and the use and production of, chemicals, plastics and other synthetic materials of all kinds. In most cases, it is not possible to identify locations from the descriptions in our **catalogue**, but an examination of individual documents may well prove fruitful.

5.9. Cyanides

Cyanides are subject to specific requirements because the way they break down and their effects on human health pose particular concerns. References to cyanides are in the records of the Water Pollution Research Board and Laboratory (**AY 2** and **DSIR 13**), as well as a number of other departments.

5.10. Explosives

Records relating to the Royal Gunpowder Factories at Waltham Abbey and Faversham **(WO 385** and **WO 397**) include numerous plans showing buildings used for the production and storage of such substances as cordite, guncotton, nitroglycerine etc. **SUPP 5** also contains records relating to the production of guncotton, nitrates, nitric acid, nitrocellulose and nitroglycerine.

Records of the Explosives Research and Development Establishment are in **AVIA 67**.

Several particular cases are well documented:

- underground storage for explosives at Box Quarry, Corsham, Wiltshire in the 1930s: **WO 32/3343**, **DSIR 4/2345, WO 199/1659**, **WO 166/389**
- explosion at Silvertown, January 1917, which resulted in the destruction of a number of chemical factories and other industrial premises: **HO 45/12244**, **HO 326/9**
- explosion at Fauld, Staffs, 1944: **AIR 2/6828**, **AIR 2/6966**-7, **AIR 2/10680**; **AIR 17/8**-14, **AIR 17/16**; **AIR 19/523**, **AIR 29/981**, **HO 186/2772**-3, **PREM 4/3/16**

5.11. Factories

There are references to flax factories, World War I, in **WORK 6**; and to munitions factories in Ministry of Munitions records (**MUN**).

Files on the so-called 'shadow factories' set up for the manufacture of aircraft, engines etc during the Second World War are in **AVIA 15**, **AIR 2**, **AIR 19**, **AIR 20**.

Contract rolls for the construction of Ordnance factories, rolling mills etc are in **WORK 13**.

5.12. Fortifications

Many former defence sites are likely to have been contaminated by explosives, chemicals, guns etc. Earlier material (19th-century) Board of Ordnance records contain much material about munitions stores, gun emplacements etc. There are many plans of fortifications, docks, airfields and similar sites in the records of the relevant branch of the armed forces; discrete series of plans include **ADM 140**, **WO 78** and **AVIA 62**. Defence record books in **WO 192** may be useful.

5.13. Fuels

The Ministry of Fuel and Power (later the Department of Energy) had separate divisions responsible for coal, electricity, gas, iron and steel, petroleum, and water power. Many of the Ministry's records (in **POWE** series) contain material on contamination and pollution.

5.14. Industrial sites

See under **factories**, **explosives**, **mining**. Records relating to particular substances may be identified by using our **catalogue** to search for references to such topics as gas works, iron and steel plant, oil refineries, petrol stations, chemical factories (paints, plastics, synthetic fibres etc), rubber processing, tanneries, textiles etc.

5.15. Minefields

In general, Admiralty records relating to minefields are concerned with minefields at sea, but they do contain some information about landmines. Most such records relate to the Second World War period and to post-war clearances, but there are few files from the First World War. The principal series containing information about minefields are **ADM 1**, **ADM 116**, **ADM 199**, **ADM 232**. A few charts showing the position of minefields in British waters during the Second World War are in **ADM 239**. The records of the War Office include material on the laying and clearance of minefields (**WO 32**, **WO 199**, **WO 201**). Reconnaissance reports are in **WO 204**. Maps of minefields in Libya during the Second World War are in **WO 234**. Files on the post-war clearance of such minefields are in **DEFE 2**, **FO 371**, **FO 1015**.

5.16. Mining

There is an enormous quantity of material about on coal and other mining, especially but not necessarily on Crown land. Refer to related guides for general guidance on records relating to coal mines and to other mines and quarries.

Many maps here predate the legal requirement to deposit plans of mines (1850 for coal mines, 1872 for metalliferous mines). Kain and Oliver, *The Tithe Maps of England and Wales* indicates when pits, shafts etc are shown on tithe maps (**IR 30**). Other maps are likely to be found in **CRES**, **SP**, **F** (especially the Forest of Dean series). Plans of off-shore mining in County Durham and Northumberland are in **LRRO 1**. Early examples include 16th-century maps showing open-cast mines.

E 367 includes particulars, warrants and transcripts for Crown leases, many relating to lead, gold, silver, tin, copper and other metals. Admiralty records relating to the Derwentwater estate **(ADM 68**-80, **ADM 169)** include many maps and papers relating to lead and other metalliferous mines in Cumberland and Northumberland. Lead is subject to specific requirements as the way it breaks down and its effects on human health pose particular concerns. Numerous references to lead mines are in Chancery, Duchy of Lancaster, Crown Estate Office and other records.

Plans of abandoned coal mines are held by the Coal Authority, Mining Record Office, 200 Lichfield Lane, Mansfield, Notts. NG18 4RG.

Abandonment plans for metalliferous and other non-coal, mines in England and Wales have now been dispersed to local record offices, with the exception of those in Cumbria which are currently held at the British Geological Survey Edinburgh office. Scottish abandonment plans are also with the BGS in Edinburgh; those for Ireland are held by the Geological Survey of Ireland in Dublin. There is a large holding of plans of Welsh mines in the National Library of Wales. Many mine plans remain in private hands, often with private estate offices. All these plans should be treated with caution. Many mines were exempt from the provisions of the various Acts which sought to regulate them, largely because of the size of the workforce rather than the size of the mine. Some plans were only acquired by HM Inspectors of Mines with difficulty after abandonment and are incomplete. Others, particularly from the boom in speculative mining companies of the late 1870s, can show projected rather than actual driveage.

5.17. Oil and petroleum

POWE 33 includes files about coastal pollution.

5.18. Ordnance

There are many 19th-century records on Board of Ordnance factories, gun emplacements, storage for munitions, etc in **WO 44** and **WO 55**.

5.19. Pesticides

The Ministry of Agriculture and Fisheries first became involved in the control of pesticides in 1952. This followed the report of the Gowers Committee on Health, Welfare and Safety in Non-Industrial Employment, published in 1949 (Parliamentary Papers, 1949, Cmd 7664), which revealed amongst other things a high level of fatal accidents involving the spraying of pesticides to kill weeds. These concerns resulted in the passing of the Agriculture (Poisonous Substances) Act 1952 which empowered the Minister to make regulations to specify protective clothing to be worn, procedures to be followed and the minimum age of workers to be employed when using pesticides.

A number of divisions of the agriculture ministries were responsible for administering successive acts and regulations concerning the safe use and licensing of pesticides. It was decided in 1993 that this work could be carried out by an executive agency of the Ministry of Agriculture, Fisheries and Food, and in April of that year the Pesticides Safety Directorate (PSD) was formed. PSD (now an executive agency of the Department for Environment, Food and Rural Affairs - DEFRA) is responsible for the administration of the systems of pesticide licensing and approval and for the control of pesticide use after such approval. It also controls the sale, supply, storage and advertisement of pesticides, and provides advice to Government on matters concerning pesticides and farm safety in their use. Its general aims are the protection of farm workers and consumers of farm products from harmful pesticides; the protection of wildlife, and the prevention of contamination of plant life.

5.20. Radioactive waste

The Ministry of Agriculture, Fisheries and Food was made jointly responsible with the Ministry of Housing and Local Government for the granting of authorisations for the discharge of all forms of radioactive waste to organisations which operated nuclear installations, under the Atomic Energy Authority Act 1945 and the Radioactive Substances Act 1960. The aim was to ensure that agricultural land and fishing grounds did not become contaminated with radioactivity which would then pass into the food chain. In support of this objective, MAFF carried out monitoring and sampling at disposal sites, and prepared reports on sites and participated in the preparation of site emergency arrangements. Monitoring of water quality was undertaken by the Fisheries Radiobiological Laboratory, while monitoring of agricultural land was carried out from 1954 onward by successive divisions of MAFF. Relevant records of the Fisheries Department are in **MAF 209**; records of the Fisheries Radiobiological Laboratory are in **MAF 336**. Records of the Advisory Panel on Discharge of Radioactive Wastes are in **MAF 298**.

Files of the Department of the Environment and predecessors relating to the safe disposal of radioactive waste are in **HLG 120**; many relate to named sites.

General files of the Department for Energy are in **EG 2**. **EG 4** contains the records of the Hinkley Point 'C' Inquiry.

The records of the Building Research Council in **DSIR 4** include technical papers and reports about the disposal of radioactive waste.

FO 371 contains files about the disposal of radioactive waste at sea.

Records of the UK Atomic Energy Authority are in **AB** series.

5.21. Research stations

Records of many of the government scientific research stations are in **DSIR** series.

Records of research Institutes are in **AY** series.

5.22. Searchlights

Powerful searchlights were used by the armed forces in both World Wars. In more recent decades, potential leakage of acids and other chemicals has given rise to concern. Files identifying locations during the First World War are in **AIR 1**. Second World War material is in **ADM 1**, **AVIA 7**. Some location maps are in **WO 78**.

5.23. Valuation Office records

As well as increment value duty, the Finance Act of 1910 provided for the levying of a duty on minerals. Separate field books were created to record the required information - these are identifiable in our catalogue for **IR 58** by ranges of numbers prefixed with 'M'. See also the related research guides.

5.24. Overseas

Reports on German factories at the end of the Second World War are in **WO 252**.

The records of the post-war administration of Germany also contain much information about German industry at the end of the Second World War. The Control Office, the department in London responsible for the exercise of British control in Germany and Austria, succeeded the Economic and Industrial Planning Staff administered by the War Office in 1945, and in 1947 became the German Section of the Foreign Office. Its records are in **FO 935**. In Germany, the allied powers assumed supreme authority following the unconditional surrender; the records of the Control Commission for Germany (British Element), of the British Commissioner and of his predecessor military authority, of his local administration in the British Zone and of the Control Council of the Commanders in Chief of the occupying powers, are in **FO 1005**, **FO 1008**, **FO 1010**, **FO 1012**, **FO 1023**, **FO 1046**, **FO 1049**, **FO 1056**.

Files on atomic trials in Australia are in **DEFE 16**.

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